BULLETIN

OF THE INSTITUTE OF METALS

VOLUME 3 JANUARY 1957 PART 17

NEW YEAR MESSAGE FROM THE PRESIDENT

As we enter 1957, *the pages of this* Journal *will bring to all members of the Institute of Metals my New Year message of greeting.*

First, may I express my grateful thanks for the help and support you are giving me during my year of office as your President. I am looking forward to meeting more of you in the Local Sections and on the various Committees before my term ends.

1956 *has been a year of achievement; a year that will long be remembered in the annals of the Institute, for in it not only have we moved into our beautiful new Headquarters in Belgrave Square, but, what is even more remarkable, through the generosity of our members and friends we have paid for it. When the decorations and refurnishings are completed, conditions permitting, we shall arrange for house-warming parties at which I hope we shall see many members.*

As I write this New Year Message to you, I am thinking that by the time these words appear in print, world events, now moving at such an alarming and fearful pace, may present us with quite formidable problems in our work and daily life, problems which will challenge our determination to maintain our place in the world of to-morrow. Let us, therefore, go forward into 1957 *resolved so to use the will, the vision, and the wisdom we possess, that this great Institute of ours may safely weather all the storms forecast, and begin* 1958 *with increased strength and confidence.*

In conclusion may I thank all those members who so kindly sent me Christmas cards and good wishes.

Charles Hall.

INSTITUTE NEWS

Joint Spring Meeting, 1957, with the Associazione Italiana di Metallurgia, Association Suisse pour l'Essai des Matériaux, and Société Suisse des Constructeurs de Machines

The Associazione Italiana di Metallurgia, Association Suisse pour l'Essai des Matériaux, and Société Suisse des Constructeurs de Machines have accepted invitations from the Council to hold a Joint Spring Meeting in London with the Institute in 1957. These societies have acted as hosts to the Institute in Italy or in Switzerland, and members will be glad to have the opportunity to return, in some measure, the generous hospitality offered to the Institute.

Apart from the May Lecture and the discussion on Thursday morning, the business and scientific sessions will be held at Church House, Great Smith Street, Westminster, S.W.1. It is hoped that this meeting will be attended by many members and their ladies, and that, in particular, members will arrange parties for the Banquet and Dance on Thursday, 2 May, for which the Great Room at Grosvenor House has been reserved.

A detailed programme of the meeting will be sent in due course to all members of the Institute resident in Europe. Members in other parts may obtain a copy on application to the Secretary.

PROVISIONAL PROGRAMME

Monday, 29 April

9.30 a.m. to 6.0 p.m. Registration of members and guests, at Church House, Westminster, S.W.1.

Aft. Coach tour in London or visits to works or laboratories for Italian and Swiss guests.

6.30 p.m. *Opening Ceremony* at the Royal Institution, Albemarle Street, W.1, followed by *May Lecture*.

Tuesday, 30 April

9.30 a.m. *Annual General Meeting.*
Presidential Address, by Dr. L. B. PFEIL, O.B.E., A.R.S.M., F.R.S., F.I.M.

12.0 noon. *Cocktail Party*, to meet delegates and ladies of the Italian and Swiss societies.

Aft. Visits for ladies, and visits to works by delegates of the guest societies.

2.30 p.m. *Theme : The Metal Physics of Corrosion and Oxidation.* A discussion arranged by the Metal Physics Committee.

Evg. *Reception.*

Wednesday, 1 May

Morn. Visits for delegates and ladies of guest societies.

Programme " A "

9.30 a.m. and 2.30 p.m. *Symposium on " Metallurgical Aspects of the Control of Quality in Non-Ferrous Castings "*, based on papers to be published in the *Journal*. Arranged by the Metallurgical Engineering Committee, in association with the Institute of British Foundrymen.

Programme " B "

10.0 a.m. *Theme : Niobium.* A discussion based on papers to be published in the *Journal*. Arranged by the Nuclear Energy Committee.

2.30 p.m. *Theme : Liquid Metals.* A discussion based on papers published and to be published in the *Journal*.

Evg. Free in London.

Thursday, 2 May

All-day visits for delegates and ladies of the guest societies.

10.0 a.m. *Themes: Corrosion of Aluminium Alloys* and *Magnesium–Lithium Alloys.* A discussion on papers published in the *Journal* (at 17, Belgrave Square, S.W.1).

Evg. *Banquet*, followed by a Dance, in the Great Room, Grosvenor House, Park Lane, W.1, at which delegates and ladies of the Italian and Swiss societies will be guests of the Institute.

Friday, 3 May

All-day visits for members and ladies of the guest societies and of the Institute of Metals.

Sunday, Monday, and Tuesday, 5–7 May

Visits for delegates and ladies of the Italian and Swiss societies in the Birmingham, Sheffield, and South Wales areas.

Awards of Institute Medals

The following awards of Institute of Metals Medals are announced :

(a) *The Institute of Metals (Platinum) Medal for 1957* to Dr. MAURICE COOK, F.I.M., Joint Managing Director, Imperial Chemical Industries, Ltd., Metals Division, in recognition of his outstanding contribution to the science of metallurgy, to the non-ferrous metals industry, and to the welfare of the metallurgical profession.

(b) *The Rosenhain Medal for 1957* to Dr. H. K. HARDY, A.R.S.M., A.I.M., Research Manager, Springfields Laboratories, United Kingdom Atomic Energy Authority, Industrial Group, in recognition of his outstanding contributions to knowledge in the field of physical metallurgy.

(c) *The W. H. A. Robertson Medal and Premium of Fifty Guineas for* 1956 to Mr. E. GRIFFIN, Chief Engineer, Metal Sections, Ltd., for a paper on " Cold Roll-Forming and Manipulation of Light-Gauge Sections " (*Journal* 1955–56, 84, 181).

Financial Year

The Council has resolved to change the Institute's financia year (from 1 July to 30 June) to 1 September to 31 August. The change will take place in the current financial year. In consequence, members' subscriptions for the current year will cover an additional two months (July and August, 1957), and their next subscriptions will become due on 1 September instead of 1 July 1957.

A result of the change will be that the date of the first issue of each volume of the *Journal* will coincide with the start of the Institute year.

Institute Membership

Membership of the Institute at 31 December 1956 exceeded 4700, the highest total in the Institute's history.

"Metallurgical Reviews"

The annual subscription rate for *Metallurgical Reviews* for 1957 will remain the same as for 1956, namely, members £1 12*s*. 6*d*. p.a., non-members £2 2*s*. 6*d*. p.a. In each case the subscription covers postage and the provision of a cloth binding case.

The Committee responsible for the publication of this new periodical has been gratified to know how highly subscribers to *Metallurgical Reviews* regard the quality of the matter so far published, and it is hoped that members will give the new periodical their support.

The object of *Metallurgical Reviews* is to enable the non-specialist reader to keep himself up to date regarding the state of knowledge in various industrial and academic fields relating to the science and practice of non-ferrous metallurgy, and there is no doubt that there has been a widespread need for a periodical of this character.

Any potential subscriber who would like to see a specimen copy should apply to the Secretary.

Metal Physics Committee

The Metal Physics Committee is anxious to receive suggestions for ways in which its activities may further benefit the general membership of the Institute.

Among the functions of the Committee, as laid down in its terms of reference, are: (*a*) to provide a closer link between physicists who are studying metals and academic and industrial metallurgists; (*b*) to interpret to the metallurgist the work of the physicist; and (*c*) to bring the problems of the metallurgist before the physicist.

In recent years the Committee has sought to achieve these objectives by holding symposia on various aspects of metal physics, for which papers are specially invited; organizing discussions during the Spring and Autumn Meetings of the Institute; inviting distinguished foreign scientists to give lectures while visiting Britain; and inviting British scientists to report on conferences held abroad.

These activities have been very successful, but the Committee feels that there may be other ways in which it can help members, and any suggestions received will be given the most careful consideration.

Election of Members

The following 16 Ordinary Members, 3 Junior Members, and 61 Student Members were elected on 5 December 1956:

As Ordinary Members

ALDER, Gordon Henry, Assistant Director and Area Manager, H. Rollet and Co., Ltd., Kirkby Estate, East Lancashire Road, Liverpool.

CROOKS, Robert Nicholas, A.C.T. (B'ham), L.I.M., Metallurgist, George Wimpey and Co., Ltd., Central Laboratory, Lancaster Road, Southall, Middx.

CROSER, John Alexander, Director, Enfield Tubular Products, Ltd., Wharf Road, Ponders End, Middx.

DAVIES, G. H., Chief Metallurgist, Edibrac, Ltd., Hartington Road, Broadheath, Cheshire.

DORNIN, George A., Jr., B.S., Consulting Engineer, The Shenango Furnace Co., Sharpsville, Pa., U.S.A.

INMAN, Maurice Charles, B.Sc., Ph.D., Senior Scientific Officer, Metallurgy Division, National Physical Laboratory, Teddington, Middx.

ISSERLIS, George, B.Sc., A.I.M., Lecturer in Metallurgy, Northampton Polytechnic, St. John Street, London, E.C.1.

KAY, John, A.R.T.C., A.I.M., Assistant Production Superintendent, The British Aluminium Co., Ltd., Falkirk.

KLIER, Eugene Paul, M.S., Ph.D., Professor of Metallurgy, Department of Chemical Engineering and Metallurgy, Syracuse University, Syracuse, N.Y., U.S.A.

MANN, Douglas, Director and General Manager, Albert Mann Engineering Co., Ltd. (Development Section of the United Flexible Metallic Tubing Co., Ltd.), Basildon Industrial Estate, Essex.

NOWAK, Welville Berenson, S.B., Ph.D., Nuclear Metals, Inc., 155 Massachusetts Avenue, Cambridge 39, Mass., U.S.A.

ROSS, Stafford Waldo, B.Sc., Assistant General Superintendent, Risdon Works, Electrolytic Zinc Company of Australasia, Ltd., Box 634B, G.P.O., Hobart, Tasmania.

SARKAR, B. K., 38/1A Bosabara Lane, Calcutta, India.

WAGNER, Bernard Lucien, Ing., Directeur Général Adjoint, Compagnie Française des Métaux, 7 rue du Cirque, Paris (8^{e}), France.

WANDELE, Frank Emmett, Metallurgist and Development Engineer, Consolidated Refining Co., 43 West 46th Street, New York City 36, N.Y., U.S.A.

WILLEY, John Matthew, A.M.I.E.E., Murex Welding Processes, Ltd., Hertford Road, Waltham Cross, Herts.

As Junior Members

BROWNE, James David, B.Sc., Assistant Experimental Officer, Metallurgy Division, Atomic Energy Research Establishment, Harwell, Didcot, Berks.

HODKIN, Eric Newton, A.Met., Assistant Experimental Officer, Atomic Energy Research Establishment, Harwell, Didcot, Berks.

WHITE, Ian Alexander, Assoc.Met., A.I.M., Deputy Metallurgical Development Manager, The Birmingham Small Arms Co., Ltd., Armoury Road, Small Heath, Birmingham 11.

As Student Members

ABBOTT, Colin Edward, Undergraduate, Department of Metallurgy, University of Cambridge.

ALLDAY, William John, Undergraduate, Department of Metallurgy, University of Cambridge.

ANDREWS, Charles Clifford, Undergraduate, Department of Metallurgy, University of Cambridge.

ARROWSMITH, James Michael, Undergraduate, Department of Metallurgy, University of Cambridge.

BAGSHAW, Norman Ernest, Undergraduate, Department of Metallurgy, University of Cambridge.

BAKER, Alan James, Undergraduate, Department of Metallurgy, University of Cambridge.

BELL, Frederick Davison, Undergraduate, Department of Metallurgy, University of Manchester.

COOKSEY, Christopher John, Undergraduate, Department of Metallurgy, University of Birmingham.

DUNNILL, John Bryan, Undergraduate, Department of Metallurgy, University of Nottingham.

FARMER, E. B., Undergraduate, Department of Metallurgy, University of Birmingham.

FILBY, John David, Undergraduate, Department of Metallurgy, University of Birmingham.

FOLEY, Jeffrey Harold, Undergraduate, Department of Metallurgy, University of Birmingham.

GEORGE, Peter Marshall, Undergraduate, Department of Metallurgy, University of Cambridge.

GOOD, Samuel Edward, Undergraduate, Department of Metallurgy, University of Cambridge.

GRACE, Patrick Norman, Undergraduate, Department of Metallurgy, University of Cambridge.

GRANTHAM, Derek Keeling, Undergraduate, Department of Metallurgy, King's College, Newcastle-on-Tyne.

HALL, Bernard Cecil Melville, Undergraduate, Department of Metallurgy, University of Cambridge.

HANSON, Owen Jerrold, Undergraduate, Department of Metallurgy, University of Cambridge.

HARBACH, Arthur John, Undergraduate, Department of Metallurgy, University of Sheffield.

HARRIS, Samuel James, Undergraduate, Department of Metallurgy, University of Manchester.

HEPBURN, Ian Roy, Undergraduate, Department of Metallurgy, University of Manchester.

HEWETT, Colin Arthur, B.Sc., Metallurgist, Metallurgical Laboratory, Armstrong Siddeley Motors, Ltd., Coventry.

HOARE, Michael R., Student of Metallurgy, Battersea College of Technology, London.

HUNTON, John Scott, Undergraduate, Department of Metallurgy, King's College, Newcastle-on-Tyne.

JACKSON, Peter Woodall, Undergraduate, Department of Metallurgy, University of Cambridge.

JAMES, Peter Lloyd, Undergraduate, Department of Metallurgy, University College of South Wales and Monmouthshire, Cardiff.

JOYCE, Richard Lawrence, Undergraduate, Department of Metallurgy, University of Birmingham.

KEEBLE, John Graham, Undergraduate, Department of Metallurgy, University of Cambridge.

KELLY, Patrick Manning, Undergraduate, Department of Metallurgy, University of Cambridge.

KENDRICK, Richard John, Undergraduate, Department of Metallurgy, University of Nottingham.

KYFFIN, Peter Douglas, Undergraduate, Department of Metallurgy, University of Manchester.

LEWIS, Michael John, Apprentice, Metallurgical Laboratory, De Havilland Aircraft Co., Ltd., Somerford, Christchurch, Hants.

LLOYD, Clinton Stuart, Undergraduate, Department of Metallurgy, University of Cambridge.

MORGAN, David, Undergraduate, Department of Metallurgy, University of Nottingham.

NEWALL, Roger Hargreaves, Undergraduate, Department of Metallurgy, University of Manchester.

NORTH, David, Undergraduate, Department of Metallurgy, University of Birmingham.

OXLEE, Colin Hamilton, Undergraduate, Department of Metallurgy, University of Nottingham.

PATTON, Alexander Martin, Undergraduate, Department of Metallurgy, University of Cambridge.

PEACOCK, Geoffrey Alan, Undergraduate, Department of Metallurgy, University of Birmingham.

POPE, John Frederick, B.A., Graduate Student, Department of Metallurgy, University of Cambridge.

RATCLIFF, Nigel Alec, Undergraduate, Department of Metallurgy, University of Cambridge.

RAYNHAM, Philip Charles, Undergraduate, Department of Metallurgy, University of Nottingham.

ROWCLIFFE, Arthur Frederick, Undergraduate, Department of Metallurgy, University College of South Wales and Monmouthshire, Cardiff.

RUDGE, Cyril Godfray George, Undergraduate, Department of Metallurgy, University of Cambridge.

SCED, Ian Robert, Undergraduate, Department of Metallurgy, University of Nottingham.

SEEBOHM, Richard Hugh, Undergraduate, Department of Metallurgy, University of Cambridge.

SLADE, James Edward, Undergraduate, Department of Metallurgy, University of Nottingham.

SMALLEY, Ian James, Student of Metallurgy, Battersea College of Technology, London.

SMART, David James, Undergraduate, Department of Metallurgy, University of Manchester.

SOUTHIN, Roy Thomas, Junior Technical Assistant, J. Stone and Co. (Charlton), Ltd., London, S.E.7.

STARKS, David Ernshaw, Undergraduate, Department of Metallurgy, University of Cambridge.

SUGDEN, Peter, Undergraduate, Department of Metallurgy, University of Manchester.

TERRY, John Charles, Undergraduate, Department of Metallurgy, University of Birmingham.

THORNTON, Cedric Herbert, Undergraduate, Department of Metallurgy, University of Nottingham.

TUFFREY, Anthony, Undergraduate, Department of Metallurgy, University of Nottingham.

VARLEY, Robert, Undergraduate, Department of Metallurgy, University of Cambridge.

WALKER, Brian, Undergraduate, Department of Metallurgy, University of Birmingham.

WALTER, Peter Frank, Undergraduate, Department of Metallurgy, University of Cambridge.

WILDE, David, Undergraduate, Department of Metallurgy, University of Manchester.

WILKINSON, Geoffrey Malcolm Blackburn, Undergraduate, Department of Metallurgy, University of Cambridge.

WORLEY, Edward Michael, Undergraduate, Department of Metallurgy, University of Cambridge.

PERSONAL NOTES

DR. F. P. BOWDEN, Reader in Physical Chemistry in the University of Cambridge, has been awarded the Rumford Medal of the Royal Society, in recognition of his distinguished work on the nature of friction.

PROFESSOR D. S. CLARK, of the California Institute of Technology, has been elected President of the American Society for Metals.

MR. W. H. EISENMAN, Secretary of the American Society for Metals, has been awarded the Society's Gold Medal in recognition of his many years' service to metallurgy, particularly as Secretary to the A.S.M.

MR. R. A. ESMONDE has left the London Aluminium Co., Ltd., to take up a post in the Development Division of the Aluminium Company of Canada, Ltd.

MR. J. GRAHAM has left the University of Birmingham, having obtained the Ph.D. degree, and is now a Research Officer in the Division of Industrial Chemistry, C.S.I.R.O., Fishermen's Bend, Melbourne, Australia.

MR. RAJENDRA KUMAR has left Sheffield University and returned to India.

Mr. W. J. Neagle-Jones has taken up an appointment with the Tinplate Division of The Steel Company of Wales, Ltd., Swansea.

Mr. S. V. Radcliffe has obtained the degree of Ph.D. of Liverpool University and is now working as a Research Associate in the Department of Metallurgy, Massachusetts Institute of Technology, Cambridge, Mass.

Dr. E. G. Ramachandran has relinquished his appointment as Assistant Professor of Metallurgy at the Indian Institute of Science, Bangalore, and has been appointed Assistant Director of the National Metallurgical Laboratory of India, Jamshedpur. He will also act as Head of the Division of Physical Metallurgy.

Mr. R. G. Rose has left the University of Liverpool to become a Scientific Officer at the Culcheth Laboratories of the U.K. Atomic Energy Authority.

Mr. R. W. Ruddle is relinquishing his appointment as Head of the Melting and Casting Section of the British Non-Ferrous Metals Research Association on 31 January to take up the post of Technical Manager with Foundry Services Inc., Columbus, Ohio, an associate company of Foundry Services, Ltd., Birmingham.

Mr. L. G. V. Skelton has left High Duty Alloys, Ltd., Briton Ferry, and is now with Skelton-Thomas Signs, Ltd., Port Talbot, Glam.

Mr. A. Stuttard has left Mullard Blackburn Works, Ltd., and is now at the Windscale Works, Sellafield, Cumberland, of the U.K. Atomic Energy Authority.

Mr. C. W. Tuck has left the Ionic Plating Co., Birmingham, and joined the staff of the G.K.N. Group Research Laboratory, Wolverhampton.

Mr. E. V. Tull has left University College, Swansea, and joined N. C. Ashton, Ltd., Huddersfield.

Mr. W. R. Upthegrove has left the University of Michigan and is now at the School of Metallurgical Engineering, University of Oklahoma, Norman, Okla.

Dr. H. W. Weart has left the University of Wisconsin and joined the Research Laboratories of the Westinghouse Electric Corp., Pittsburgh, Pa.

Mr. J. Wilcock has been awarded a Joseph Lucas Fellowship in the Department of Industrial Metallurgy, University of Birmingham.

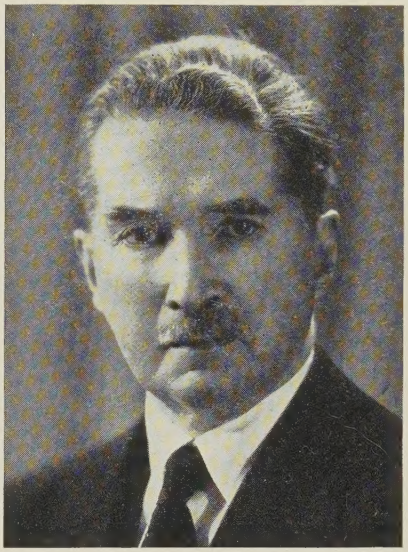
Mr. R. N. Wilson has left the University of Sheffield and is now a Scientific Officer in the Royal Aircraft Establishment, Farnborough, Hants.

OBITUARY

Professor Georg Masing

As briefly announced in the November issue of the *Bulletin*, Professor Masing died at Göttingen on 2 October 1956, after a long illness.

Georg Masing was born at St. Petersburg and was educated at the Humanistische Gymnasium there. In the autumn of 1905 he went to Göttingen to study physical chemistry under Gustav Tammann. On his graduation from the university he entered industry and was for many years with Siemens & Halske of Berlin. His work there covered a very wide range of problems, and always he sought not only to find the immediate practical solution but also to discover the underlying principles involved. This brought him into contact with the academic world and in 1927 Masing began to lecture at the Technische Hochschule, Berlin-Charlottenburg. In 1935 he was given the title of professor and three years later he was appointed professor at Göttingen University and Director of the newly established Institut für allgemeine Metallkunde. This latter post he held until his death, although he retired from the professorship in 1953. His appointment was universally applauded, for it was generally agreed that there was no one else in Germany so well qualified to co-ordinate the numerous and varied aspects of metallurgy,



embodying as it does parts of many kindred sciences and technologies, and to relate them to developments in the fundamental sciences, physics and chemistry. Masing's ability in this respect is well brought out in many of the large number of papers he published over a period of 40 years, and in his books: "Handbuch der Metallphysik" and "Lehrbuch der allgemeinen Metallkunde". A second edition of the latter book—which was his most important work—was in preparation at the time of his death. In it he succeeded in relating recent advances in physical science to the more practical aspects of metallurgy. An introductory textbook by him, "Grundlagen der Metallkunde in anschaulicher Darstellung", has been translated into English by Professor F. C. Thompson and will shortly be published by the Institute of Metals.

Masing worked hard and disinterestedly for the recognition of metallurgy as an independent branch of science. He was one of the founders of the Deutsche Gesellschaft für Metallkunde and served almost continuously on its Council, being twice President. Not only was he responsible for arranging and taking a prominent part in many meetings on metallurgical subjects, but he was always ready to champion the science of metallurgy whenever the need arose.

He was a born science teacher. He made the same exacting demands on his students as he did on himself, and his methods and approach to his subject proved to have a strong appeal for students. From his friends and colleagues he received esteem, affection, and gratitude, for he was ever ready to give advice on professional or personal problems.

The many honours Masing received bore testimony to the

outstanding part he played in establishing the science of metallurgy as we know it today. The Deutsche Gesellschaft für Metallkunde gave him its highest award, the Heyn Medal, and made him Honorary President; the Technische Universität of Berlin-Charlottenburg made him an honorary doctor; and he was the first German scientist to receive the Institute of Metals Platinum Medal (in 1953).

Members of the Institute will join with many others throughout the world in mourning the loss, in Georg Masing, of an outstanding scientist, a noble character, and a charming personality.

WERNER KÖSTER.

Mr. P. V. Hunter, C.B.E.

Philip Vassar Hunter, who died on 22 October last, entered Faraday House in January 1900, and on completing his course in 1903 was awarded an honours diploma. Subsequently he obtained an Assistant Engineer's appointment with the late Robert Hammond, the well-known consulting engineer and electrical pioneer. A year later Mr. Hunter joined the staff of Merz and McLellan at Newcastle-on-Tyne, staying with them for fifteen years and becoming the head of their Electrical Department, in which position he had considerable experience of power stations, waste-heat generating stations, and railway electrification schemes in South America and Australia.

During the 1914–18 war Mr. Hunter was engaged upon technical matters of national importance, and in 1917 was lent to the Admiralty for service with the Anti-Submarine Division of the Naval Staff, as the engineering member of the committee specially concerned with the development of methods of location and destruction of enemy submarines. In the course of this work the now-famous "Asdic" gear was evolved.

On the completion of his work at the Admiralty, Mr. Hunter joined Callender's Cable and Construction Co., Ltd., in 1919 as Chief Engineer and later became well known as the inventor of the "split-conductor" and "four-conductor" methods of automatic cable protection. These systems were widely accepted by power companies, and are in constant use today. In 1938 he was appointed a director of the Company and from 1945 to 1949 he was Engineer-in-Chief of British Insulated Callender's Cables, Ltd.; subsequently he became Joint Deputy Chairman of the Company.

For many years Mr. Hunter served on the Council and on committees of the Institution of Electrical Engineers and also represented the Institution on national committees. In 1933 he was elected President and in 1951 an Honorary Member of the Institution. He became a member of the Institute of Metals in 1947 and served as a Vice-President from 1951 to 1954.

JOINT ACTIVITIES

Sixth Commonwealth Mining and Metallurgical Congress

A preliminary announcement about this Congress, to be held in Canada from 8 September to 9 October, 1957, was made in the May 1956 issue of the *Bulletin* (p. 81). The second brochure mentioned there has now been published. It contains full details of the tours that are being arranged in connection with the Congress, and it includes a registration form. Copies may be obtained on application to the Executive Secretary, Sixth Commonwealth Mining and Metallurgical Congress, 507–837 West Hastings Street, Vancouver 1, B.C., Canada.

Members who propose to attend the Congress and have difficulty in obtaining the necessary Canadian dollars to pay the registration fee are requested to complete and return their Reply Forms to the Executive Secretary. It will be in order to pay the registration fee in Canadian dollars at a later date or even after arrival in Vancouver.

OTHER NEWS

"Acta Metallurgica"

The Board of Governors of *Acta Metallurgica* announce that, in response to the increased number of papers calling for publication, each volume will in future contain 800 pages instead of 660 pages. To accommodate the increased number of pages and also to enable speedier publication, the journal will be published monthly, each volume consisting of 12 issues.

A small increase in price will be required to cover the increased size and frequency of publication. The new subscription rates will be as follows:

Members of the American Society for Metals .	$ 8
Members of co-operating societies . . .	$12
Individuals not members of either . . .	$16

These changes will come into effect with Volume 5, in January 1957.

International Union of Crystallography

Fourth General Assembly and International Congress

The International Union of Crystallography has accepted the invitation of the National Research Council of Canada to hold its Fourth General Assembly and International Congress in Canada from 10 to 17 July 1957, followed by two Symposia on 18 and 19 July. At the Congress papers will be presented on all aspects of crystallographic research; the subjects of the Symposia will be "Physical Techniques of Crystallographic Interest" and "Electron Diffraction". Through the co-operation of McGill University and the University of Montreal, the meetings are being held in the City of Montreal. Technical excursions to other parts of the Province of Quebec and to sections of the Province of Ontario are being arranged.

The Canadian National Committee on Crystallography is acting as the Local Committee on the Congress and has prepared a brochure giving details of the technical programme topics and accommodation for the Congress. Copies of this have been forwarded to the Secretaries of the National Committees of the Member Countries of the Union. Copies may be obtained from them; from the General Secretary of the Union, Dr. D. W. Smits, Laboratorium voor Anorganische en Fysische Chemie, Bloemsingel 10, Groningen, The Netherlands; or from the Secretary of the Canadian Committee, Dr. W. H. Barnes, Division of Physics, National Research Council, Ottawa 2, Ont., Canada (envelope to be clearly marked "Personal"); or from the Chairman of the Programme Committee, Dr. W. N. Lipscomb, School of Chemistry, University of Minnesota, Minneapolis, U.S.A.

Symposium on "The Isolation of Phase Constituents in Metals and Alloys"

The Max-Planck-Institut für Eisenforschung, Düsseldorf, and the Institut für Metallkunde an der Montanistischen Hochschule Leoben will hold a Symposium on "The Isolation of Phase Constituents in Metals and Alloys" at Leoben (Austria) on 7 and 8 March 1957.

DIARY

The Institute

27 February. Informal discussion on "Degreasing", arranged by the Metallurgical Engineering Committee. (Chemistry Lecture Theatre, University, Edgbaston, Birmingham 15, at 10.30 a.m.)

Local Sections and Associated Societies

31 January. Birmingham Local Section. "Pure Metals", by Dr. J. C. Chaston. (Birmingham Exchange and Engineering Centre, Stephenson Place, Birmingham, at 6.30 p.m.)

5 February. Oxford Local Section. Junior Members' Evening. Discussion on "Surfaces". (Cadena Café, Cornmarket Street, Oxford, at 7.0 p.m.)

7 February. Leeds Metallurgical Society. "Fuel-Ash Corrosion Problems", by Professor A. Preece. (Large Chemistry Lecture Theatre, The University, Leeds 2, at 7.15 p.m.)

7 February. London Local Section. "Beryllium", by Bengt Kjellgren. (17 Belgrave Square, London, S.W.1, at 6.30 p.m.)

12 February. South Wales Local Section. "Neutron-Irradiation Effects in Metals", by Professor J. G. Ball. (Department of Metallurgy, University College, Singleton Park, Swansea, at 6.45 p.m.)

13 February. Manchester Metallurgical Society. "Titanium", by Dr. J. W. Rodgers. (Manchester Room of the Central Library, Manchester, at 6.30 p.m.)

14 February. Birmingham Local Section. "Modern Developments in Forging, Rolling, and Extrusion", by Professor A. R. E. Singer. (College of Technology, at 6.30 p.m.)

14 February. Liverpool Metallurgical Society. "Work-Hardening and Dislocation Theory", by Dr. A. H. Cottrell. (Liverpool Engineering Society, 9 The Temple, Dale Street, Liverpool, at 7.0 p.m.)

18 February. Sheffield Local Section. "Radiation Damage to Metals", by Dr. W. M. Lomer. (Engineering Lecture Theatre, The University, St. George's Square, Sheffield 1, at 7.30 p.m.)

19 February. North East Metallurgical Society. "Metallurgical Principles of Light-Alloy Foundry Practice", by Dr. W. A. Baker. (Cleveland Scientific and Technical Institution, Middlesbrough, at 7.15 p.m.)

27 February. Manchester Metallurgical Society. "Mechanism of Diffusion", by A. D. LeClaire. (Manchester Room of the Central Library, Manchester, at 6.30 p.m.)

28 February. Birmingham Local Section. "Nickel Alloys with Special Properties in the Field of Physics and Electrical Engineering", by C. Gordon Smith. (Birmingham Exchange and Engineering Centre, Stephenson Place, Birmingham, at 6.30 p.m.)

Other Societies

11 February. East Midlands Metallurgical Society. Members' Night. (Nottingham and District Technical College, at 7.30 p.m.)

14 February. Institute of British Foundrymen, Beds./Herts. Section. "Behaviour of Moulding Sands at High Temperatures", by W. B. Parkes. (Small Assembly Room, Town Hall, Luton, at 7.30 p.m.)

19 February. Institute of British Foundrymen, East Anglian Section. "Refractories for Foundries and Furnaces", by Dr. W. F. Ford. (Lecture Hall, Public Library, Ipswich, at 7.30 p.m.)

19 February. Institute of British Foundrymen, Slough Section. "Mechanical Properties of Test-Bars and Castings", by Dr. E. Scheuer. (Lecture Theatre, High Duty Alloys, Ltd., Slough, at 7.30 p.m.)

20 February. Society of Chemical Industry, Corrosion Group. "Theory and Practice in Potential Measurements for Cathodic Protection", by P. W. Heselgrave. (14 Belgrave Square, London, S.W.1, at 6.30 p.m.)

27 February. Institute of British Foundrymen, London Branch. "Methods Engineering with Emphasis on the Flow Process Applied to Fettling-Shop Control", by F. Gaiger and R. Hancox. (Constitutional Club, Northumberland Avenue, London, W.C.2, at 7.30 p.m.)

APPOINTMENTS VACANT

ANALYTICAL CHEMIST. A large non-ferrous metallurgical works in the Manchester area requires Analytical Chemist experienced in metallurgical and general inorganic analysis. Must be capable of evolving own methods and of supervising juniors. Vacancy is eminently suitable for person, male or female, in middle twenties, who is anxious to take on more responsibility. Laboratories available are newly built and equipped. Terms of engagement include 5-day week and superannuation scheme. Applications should outline age and experience and give indication of salary required. Write Box No. 422, The Institute of Metals, 17 Belgrave Square, London, S.W.1.

BRITISH NON-FERROUS METALS RESEARCH ASSOCIATION requires investigators to study problems in corrosion, physical metallurgy, casting, and instrumentation fields. Applicants should have a good degree in metallurgy, chemistry, or physics. Initial salary range £700–£1000 p.a., depending on qualifications and experience. Write: Research Manager, The British Non-Ferrous Metals Research Association, 81–91 Euston Street, London, N.W.1.

CORROSION RESEARCH

THE MOND NICKEL COMPANY, LTD., require at their Birmingham Research Laboratories, a physical chemist or metallurgist interested in metallic corrosion, to undertake work of both a practical and a theoretical nature on compositional and environmental factors affecting corrosion-resistance. This work will include studies of oxide-film stability, anodic polarization, and stress-corrosion mechanisms. Individual publication of results is encouraged.

Salary will be in accordance with experience and qualifications. Pension and insurance schemes are in operation, and, in appropriate cases, assistance can be given for housing. Applications, which will be treated in confidence, should give details of age, qualifications, and experience and be addressed to The Manager, Development and Research Department, The Mond Nickel Co., Ltd., Thames House, Millbank, London, S.W.1. Mark envelope "Confidential L.37".

HADFIELDS, LTD., require the following additional Staff in their Research Departments:

(i) An experienced and qualified man to be responsible for routine testing of refractory materials and general laboratory supervision.

(ii) A Graduate (or H.N.C.) to assist in the development of new or modified casting methods. The duties for this post also include the periodic supervision of current production methods.

Excellent working conditions. Five-day week. Welfare and dining facilities. Applications, giving details of age and previous experience, should be addressed to the Personnel Manager, Hadfields, Ltd., East Hecla Works, Vulcan Road, Sheffield 9, quoting PL.8511.

HIGH DUTY ALLOYS, LTD., Research Division, Slough, Bucks., require a mechanical testing engineer to work on investigations concerned with the creep and fatigue properties of aluminium- and titanium-base alloys. Candidates should preferably be of degree or equivalent standard. The salary paid will be commensurate with qualifications and experience, and the post is pensionable. Write, giving full details, to the Staff Manager, address as above.

HIGH DUTY ALLOYS, LTD., Research Division, Slough, Bucks., require a Metallurgist to fill a vacancy in the Metallography Department. The work involves study of a variety of interesting problems concerning light alloys. Candidates should preferably have a degree or its equivalent and some research experience is desirable but not essential. A pension scheme is in operation, and the salary paid will be commensurate with age, experience, and qualifications. Apply, giving full details, to the Staff Manager, address as above.

METALLURGIST aged 22–25 years required to assist in the Metallurgical Laboratory of a company in North-East England manufacturing plant for the steel, gas, chemical, and petroleum industries. The work is of a varied nature and covers ferrous and non-ferrous weld metallurgy, Meehanite castings, and special investigations. Applicants should possess a university degree or be Licentiate of the Institution of Metallurgists. Apply Box No. 421, The Institute of Metals, 17 Belgrave Square, London, S.W.1.

METALLURGIST. Central Research Organization of GLACIER METAL CO., requires an experienced Metallurgist for development of a new bearing material and processes required for manufacture. There are difficult technical problems involved and opportunity for a good man to prove himself. Requirements: Degree in Metallurgy, or A.I.M., or Degree in Chemistry with Metallurgical experience. Must have research experience, preferably in non-ferrous metallurgy. Salary to £1000. Personnel Officer (Ref. 671), The Glacier Metal Co., Ltd., Ealing Road, Wembley, Middx.

METALLURGIST required to direct the activities of group engaged on research into the melting, metal treatment, and casting of aluminium alloys intended for fabrication by rolling, extrusion, and forging. The work involves both basic and applied research and demands a university graduate of several years' experience. Excellent working conditions. Pension and Life Assurance Scheme in operation. Apply to: Personnel Officer, Aluminium Laboratories, Limited, Banbury.

METALLURGISTS and chemists required for the development and evaluation of new foundry processes and techniques. Excellent prospects and attractive salaries. Opportunities for advancement. Staff keen to emigrate or work abroad are particularly required to fill important vacancies arising in overseas companies. Minimum qualifications H.N.C. or equivalent. Salary according to qualifications and experience. Reply to Technical Manager, Foundry Services, Ltd., Nechells, Birmingham 7.

METALLURGISTS or METALLURGICAL CHEMISTS, B.Sc. or equivalent, required for Tin Smelting Works in Singapore and Malaya. Age 22/30. Single. First-class passage and free furnished quarters provided. Provident Fund. Salary according to qualifications and experience, but not less than £1200 p.a. Apply giving full details of age, education, qualifications and experience, National Service, &c., to Box No. 423, The Institute of Metals, 17 Belgrave Square, London, S.W.1.

PHYSICISTS,
PHYSICAL METALLURGISTS
and **METALLURGISTS**
are required in the
ATOMIC POWER DEPARTMENT
of The English Electric Co., Ltd.

at Whetstone, near Leicester, for research and development work dealing with uranium, beryllium, and zirconium, and other reactor materials.

Applicants with previous research experience preferred, but consideration will also be given to graduates, for whom deferment can be obtained. Applications to Dept. C.P.S., 336/7 Strand, W.C.2, quoting Ref. IM1814B.

SPECTROGRAPHIC RESEARCH

A PHYSICIST is required by The Mond Nickel Company, Ltd., to carry out, at its Birmingham Laboratory, investigations into new techniques for the detection and estimation of trace elements in nickel-base and iron-base alloys. Applicants should hold a University degree in Physics or equivalent qualifications. Previous experience with physical methods of analysis would be an advantage, but is not essential, provided that applicants are keenly interested in such work and are capable of working on their own initiative. Individual publication of results is encouraged.

Salary will be in accordance with experience and qualifications. Pension and insurance schemes are in operation and, in appropriate cases, assistance can be given for housing. Applications, which will be treated in confidence, should give details of age, qualifications, and experience and be addressed to The Manager, The Mond Nickel Co., Ltd., Thames House, Millbank, London, S.W.1. Mark envelope "Confidential L.38".

THE MULLARD RADIO VALVE CO., LTD., Materials Research Laboratory requires a GRADUATE METALLURGIST, or a person with similar qualifications to undertake interesting and varied work in the Material Research Laboratory on the investigation of a range of materials for use in the electronic field.

The post may have special appeal to a person who likes to use ingenuity and is adaptable.

The commencing salary will be according to ability, experience, and qualifications, and can be regarded as competitive in this field.

Employee benefits, pension scheme, holidays plan have long been established with the Company, and applications should be addressed to the Personnel Officer, The Mullard Radio Valve Co., Ltd., New Road, Mitcham Junction, Surrey, quoting reference JFG/MR1.

THE ROYAL COLLEGE
OF SCIENCE AND TECHNOLOGY
GLASGOW
(*In Affiliation with the University*)

Applications are invited for

LECTURESHIP IN METALLURGY.

Candidates should have a good degree and preferably industrial experience. Salary on scale £1350 with F.S.S.U. and Family Allowances. Application forms from the Secretary.